

Abstract

For effective use of wind power installations, it is advantageous for regulation and operational management of a wind power installation to be carried out in such a way as to ensure fully automatic operation of the installation. Any other mode of operation which requires manual intervention in the normal operating procedure is unacceptable for economic considerations. In order further to increase the economy of the installation, regulation should be effected in such a way that the degree of energy conversion achieved in each operating condition is as high as possible. A further important aspect in terms of regulation and operational management of a wind power installation is operational safety. Technical faults and environmentally induced danger conditions must be recognised and the safety systems present triggered. In addition a regulating system can contribute to reducing the mechanical loading on the wind power installation.

For further improving maintenance, safety and economy of a wind power installation, it is desirable for further parameters of the wind power installation to be monitored. Therefore, the object of the invention is to improve monitoring of wind power installations.

A method of acoustically monitoring wind power installations, comprising the steps: recording a reference noise spectrum of a wind power installation and/or parts thereof at at least one given location of the installation, storing said reference spectrum in a storage means, recording the operating noise spectrum during operation at the given location or locations of the installation, comparing the recorded operating noise spectrum to the stored reference spectrum, and detecting deviations between the operating noise spectrum and the reference spectrum.